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NOTICE OF ALLOWANCE AND FEE(S) DUE

22801 7590 09/21/2009

LEE & HAYES, PLLC
601 W. RIVERSIDE AVENUE
SUITE 1400
SPOKANE, WA 99201

EXAMINER

ROBERTSON, DAVID

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 09/21/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/603,541

06/25/2003

Jesper B. Lind

MS1-4639US

4073

TITLE OF INVENTION: SYSTEMS AND METHODS FOR IMPROVING COLLABORATIVE FILTERING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	12/21/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22801 7590 09/21/2009

LEE & HAYES, PLLC
601 W. RIVERSIDE AVENUE
SUITE 1400
SPOKANE, WA 99201

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/603,541 06/25/2003 Jesper B. Lind MS1-4639US 4073

TITLE OF INVENTION: SYSTEMS AND METHODS FOR IMPROVING COLLABORATIVE FILTERING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 12/21/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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ROBERTSON, DAVID 2121 705-010000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,541	06/25/2003	Jesper B. Lind	MS1-4639US	4073
22801	7590	09/21/2009	EXAMINER	
LEE & HAYES, PLLC 601 W. RIVERSIDE AVENUE SUITE 1400 SPOKANE, WA 99201			ROBERTSON, DAVID	
			ART UNIT	PAPER NUMBER
			2121	
DATE MAILED: 09/21/2009				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1354 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1354 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/603,541	LIND ET AL.	
	Examiner	Art Unit	
	Dave Robertson	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/6/2009.
2. ☒ The allowed claim(s) is/are 1-144, 146-155, and 157.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <p>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____</p> <p>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</p> | <p>5. <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____.</p> <p>7. <input type="checkbox"/> Examiner's Amendment/Comment</p> <p>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</p> <p>9. <input type="checkbox"/> Other ____.</p> |
|--|---|

/Albert DeCady/
Supervisory Patent Examiner, Art Unit 2121

DETAILED ACTION

1. This is an Allowance of all claims pending after entry of the RCE filed 7/6/2009 and withdrawal of the restriction requirement/election of 2/26/2008. Applicant amends all independent claims to recite subject matter indicated as allowable in the office action of 6/10/2009, and all dependent claims are amended to depend from an allowable independent claim. Accordingly, with the withdrawal and/or cancellation of restricted claims as below, claims 1-144, 146-155, and 157 are allowed.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/6/2009 has been entered.

Response to Amendment

3. Applicant amends claims 101 and 152-155 to recite statutory subject matter. Accordingly, the rejections under 35 U.S.C. 101 are withdrawn.

Election/Restrictions

4. Claims 1-144, 146-155 and 157 are allowable. The restriction requirement between inventions Group I and Group II, and by election of Group I, the further restriction requirement among inventions i-xxviii, as set forth in the Office action mailed on 2/26/2008, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). **The restriction requirement is hereby withdrawn as to any claim that requires all the limitations of an allowable claim.**

Claims 5-100, 102-144, and 146-149 are no longer withdrawn from consideration because the claims require all the limitations of an allowable claim. However, claim 145 remains withdrawn from consideration because it does not require all the limitations of an allowable claim.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

5. This application is in condition for allowance except for the presence of claim 145 directed to an invention non-elected without traverse. Accordingly, claim 145 has been cancelled.

Reasons for Allowance

6. The following is an examiner's statement of reasons for allowance:

Claims 1-144, 146-155, and 157 are allowed over the prior art of record for reasons given and supported by Applicant's substantive arguments filed with the amendment of 1/20/2009, which remain persuasive with respect to Linden et al. (US 6,216,649) in view of Karypis et al. ("Evaluation of Item- based Top-N Recommendation Algorithms" 2001).

Specifically, none of Linden et al., Karypis et al., as above, nor Linden (US Pat. No. 7,428,500), Jacobi et al. (US Pat. No. 7,113,917), Lazarus et al. (US Pat. No. 6,134,532), Pyo (US Pat. No. 6,636,836), or Delgado et al. (US Pat. No. 6,801,909), alone or in combination, teach or fairly suggest the method of claim 101 *a method of data analysis, employing collaborative filtering...comprising selecting an appropriate measure of association from among known measures of association, the selection is based on the known measures of association and the item set in conjunction with scoring at least one item of the item set by employing the at least one additional measure of association and employing the multiple-score collaborative filtering evaluation method to obtain a single score for an item when more than one measure of association score applies to that item* as recited in claim 101, and in the alternative embodiments of claim 101 (independent claims 101, 129, 141-144 and 157),

Linden ('500 and '649) and Jacobi et al. (note common inventor Linden/common assignee Amazon.com) teaches automated systems and methods for making purchasing or information retrieval recommendations using item-based similarity

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measures. Linden and Jacobi teach using Lift as a similarity measure (Linden '649, 'column 13, lines 13-38; Jacobi, column 5, lines 3-48 and column 9, lines 10-28), including applying *weights* to recommendations from different lists (e.g. Linden '649, column 14, lines 44-57) in the generation of a recommendations or a "Similar Items Table" (Jacobi, column 11 from line 48). In "Amazon.com Recommendations: Item-to-Item Collaborative Filtering" (IEEE Internet Computing, January-February 2003), Linden et al. teach the use of a cosine similarity measure (pg. 77) and that similarity of two customers can be measured in various ways (pg. 77, left column, 2nd paragraph); however, neither Linden nor Jacobi expressly teach selecting from among *multiple* measures of association (similarity measures); however Linden and Jacobi do not expressly teach nor fairly suggest *selecting an appropriate measure of association from among known measures of association, the selection based on the known measures of association and the item set in conjunction with scoring at least one item of the item set by employing the at least one additional measure of association and employing the multiple-score collaborative filtering evaluation method to obtain a single score for an item when more than one measure of association score applies to that item* as recited in claim 101, and in the alternative embodiments of claim 101 (independent claims 101, 129, 141-144 and 157): As pointed out by Applicant (Remarks, 1/20/2009, pgs. 32-33), combining multiple recommendation lists to take the best recommendations of each, does not explicitly teach nor require that each recommendation list was formed of a different measure of association (i.e. similarity measure).

Lazurus teaches a collaborative filtering algorithm based on a vector-based similarity measure, where items of an item-vector are correlated with other vectors to determine the measure of association of an item to one or more items of an item set. However, Lazurus does not teach or fairly suggest *selecting an appropriate measure of association from among known measures of association, the selection based on the known measures of association and the item set in conjunction with scoring at least one item of the item set by employing the at least one additional measure of association and employing the multiple-score collaborative filtering evaluation method to obtain a single score for an item when more than one measure of association score applies to that item* as recited in claim 101, and in the alternative embodiments of claim 101 (independent claims 101, 129, 141-144 and 157): Lazurus' *measure of association*, the vector based similarity measure is the same for all vectors, notwithstanding that vectors may contain different data (different item sets).

Pyo (US Pat. No. 6,636,836) teaches a method and system for combining results of multiple recommendation systems with a recommendation manager component. However, similar to Linden and Jacobi in the combination of item lists, Pyo does not expressly teach that the recommendation systems each employ a different measure of association, and therefore does not teach or fairly suggest *selecting an appropriate measure of association from among known measures of association, the selection based on the known measures of association and the item set in conjunction with scoring at least one item of the item set by employing the at least one additional measure of association and employing the multiple-score collaborative filtering*

evaluation method to obtain a single score for an item when more than one measure of association score applies to that item as recited in claim 101, and in the alternative embodiments of claim 101 (independent claims 101, 129, 141-144 and 157):

Delgado et al. (US Pat. No. 6,801,909) teaches providing a recommendations list using content-based filtering and suggests that the method may be used to implement automated collaborative filtering (column 5, lines 47-63), including calculation of a similarity measure (column 9, lines 15-35), however, similar to Lazarus, Delgado does not teach or fairly suggest *selecting an appropriate measure of association from among known measures of association, the selection based on the known measures of association and the item set in conjunction with scoring at least one item of the item set by employing the at least one additional measure of association and employing the multiple-score collaborative filtering evaluation method to obtain a single score for an item when more than one measure of association score applies to that item as recited in claim 101, and in the alternative embodiments of claim 101 (independent claims 101, 129, 141-144 and 157):* Delgado's *measure of association*, the content filter-based similarity measure is the same for all content, notwithstanding that content (data) may be different for different item sets.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Robertson whose telephone number is (571)272-8220. The examiner can normally be reached on 9 am to 5 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Albert DeCady/

Supervisory Patent Examiner, Art

Unit 2121

/Dave Robertson/

Examiner, Art Unit 2121